

**Date:** September 21, 2009

**Title:** Ratios, proportions, percentages review

**Objective:** To practice with ratios and proportions and percentages.

**IN:** Saul estimates that two out of every three students in his school will attend his party this weekend. If there are 1750 students at Arvada West High School, how many students are going to Saul's party?

### **How Vitruvian are you?**

- a palm is the width of four fingers
- the distance from the bottom of the chin to the nose is one-third of the length of the head
- the distance from the hairline to the eyebrows is one-third of the length of the face
- the length of the ear is one-third of the length of the face
- the length of a man's outspread arms (arm span) is equal to his height.
- the distance from the elbow to the tip of the hand is a quarter of a man's height
- the distance from the elbow to the armpit is one-eighth of a man's height
- the length of the hand is one-tenth of a man's height
- the length of a man's foot is one-sixth of his height

1)

Eye Color

	Brown eyes	Blue eyes	Hazel eyes
9th graders	9	3	2
10th graders	11	4	1

Write these ratios as fractions.

- 9th graders with brown eyes to ninth graders
- 10th graders with brown eyes to students with brown eyes
- 10th graders with blue eyes to ninth graders with blue eyes
- all students with hazel eyes to students in both grades

- 2) **APPLICATION** Fisherman Beta Hook was hired to estimate the fish population in Long Lake. She and three friends fished for a week, and in that time they caught, tagged, and released 235 bass, 147 trout, and 151 perch. Later that summer they returned and spent two weeks fishing in different parts of the lake. Here are the results:

Fish Population

	Bass	Trout	Perch
Tagged	24	15	16
Untagged	336	208	192

Use this data to estimate the population of each of the three fish species.

**3)** Write and solve a proportion for each situation.

- a. A candy maker put prizes in 600 bags of candy. He then took a random sample of 125 bags of candy and counted 8 bags with prizes in them. Approximately how many bags of candy did the candy maker have?
- b. A candy maker estimated that she had 2500 bags of candy. She had put prizes in 92 of them. She collected a sample in which there were 7 bags of candy with prizes. Approximately how many bags of candy were in the sample the candy maker collected?

**4)** The proportion  $\frac{36}{45} = \frac{x}{100}$  asks, "36 is what percent of 45?" Write each proportion as a percent question.

a.  $\frac{180}{100} = \frac{n}{36}$

b.  $\frac{a}{100} = \frac{27}{4}$

c.  $\frac{386}{p} = \frac{712}{100}$

d.  $\frac{11}{111} = \frac{t}{100}$



Homework:  
Worksheet on the wiki  
(1 - 4 all)

SUMMARY:  
The difference  
between a ratio  
and a  
proportion is...

OUT:

A lake is estimated  
to have 5000 fish after  
3% of the fish were tagged.  
How many fish were originally tagged?